HTIS Hazardous Technical Information Services

BULLETIN

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Tenth Anniversary: 1990-2000

DOD Ergonomics Best Practices Conference

by Evelyn B. Riley, PAO, USACHPPM

The DOD Ergonomics Best Practices 2000 Conference was held at the Uniformed Services University of the Health Sciences (USUHS), Bethesda, Maryland, on April 25, 2000. The conference was open to all DOD and Federal Agencies and was attended by over 200 people. The target audience was occupational safety and health personnel.

LTC Mary Lopez, Program Manager for Ergonomics, U.S. Army Center for Health Promotion and Preventive Medicine (USACHPPM) and Chair of the DOD Ergonomics Working Group, opened the meeting. She introduced James A. Zimble, MD, President, USUHS. He welcomed the large group to USUHS and expressed delight that an Occupational Ergonomics specialty track in the Masters of Public Health Program will be established at USUHS.

The Honorable Sherri W. Goodman, Deputy Under Secretary of Defense (Environmental Security) gave the keynote speech. She stressed the importance of ergonomics and discussed how ergonomic hazards affect every single worker in every industry. She said, "Every single worker in the U.S. has experienced work-related musculoskeletal pain and discomfort. In DOD, potential ergonomic-related conditions account for approximately 20 percent of military outpatient visits, 49 percent-- or approximately 690,000-- military limited duty dispositions, and 50 percent of DOD civilian worker compensation claims, and cost approximately $276 million in FY 99. Program development continues to be our primary focus. We are developing advanced training and degree programs to improve the skill level at the local level. We will deploy the ergonomic assessment program in the next few months and will continue to develop and refine program support tools and materials. We will develop a cost-benefit model based on DOD program successes." Ms. Goodman, borrowing from Letterkenny Army Depot (LEAD) Installation's Ergonomics Program theme of "No Pain Is Gain", stressed that DOD needs to work on changing the cultural view on pain. In her view, we should not be willing to accept pain as a part of the job or part of the status quo. She feels that all of us in DOD need to recognize that pain may be a precursor to long-term problems. She challenged the DOD and Federal sector to market ergonomics differently. "Ergo is macho" was her recommendation.

David J. Cochran, PhD, CPE, Special Assistant for Ergonomics, Department of Labor, Occupational Safety and Health Administration (OSHA), gave an update on the latest information on the Ergonomics Program Standard. He stressed the importance of ergonomics, gave background data, and explained the rule-making process. The proposed rule in the Federal Register is on the web http://www.osha-slc.gov/ergonomics-

In This Issue

The HTIS Bulletin is designed to keep DOD personnel informed of technical and regulatory developments on the environmentally safe management of hazardous materials and wastes. For technical inquiries, call **DSN 695-5168** or commercial **(804) 279-5168** or toll free **(800) 848-4847**

standard/overview.html. He explained that OSHA would modify the standard depending on the comments received.

The DOD Ergonomics Working Group, U.S. Navy, U.S. Air Force, General Services Administration, LEAD, the Computer/Electronic Accommodations Program (CAP), the U.S. Defense Occupational Health Program, and USACHPPM provided exhibits. These exhibits gave the attendees an opportunity to review literature and products available to them as well as an opportunity to review current ergonomics programs and DOD ergonomic research efforts.

Twenty breakout sessions with subject matter experts from both DOD and the Federal sector were held. The subjects covered were in three broad tracks: Program development (real life experiences), applied research (what it means to the field), and putting ergonomics into practice (what, where, when, and how). Attendees could learn about: Corporate plans for each of the Services; specific ergonomic programs for office environments or hospitals; current research being done by the National Institute for Occupational Safety and Health, Internal Revenue Service, or Military Services; or programs/tools to help them put their programs into practice such as the Defense Occupational Health Readiness System (DOHRS), Defense Environmental Network and Information Exchange (DENIX), or CAP. This multifaceted approach allowed the attendees to tailor their personal learning agenda.

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Commander, Defense Supply Center Richmond
RADM, M. A.Young, SC, USN

Director, Product Development
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Chief, Hazardous Technical Information Services Branch
Robert L. Cook

HTIS Bulletin Technical Advisor
Fred J. Tramontin, PhD

Editor, HTIS Bulletin
Natalie R. Carrington

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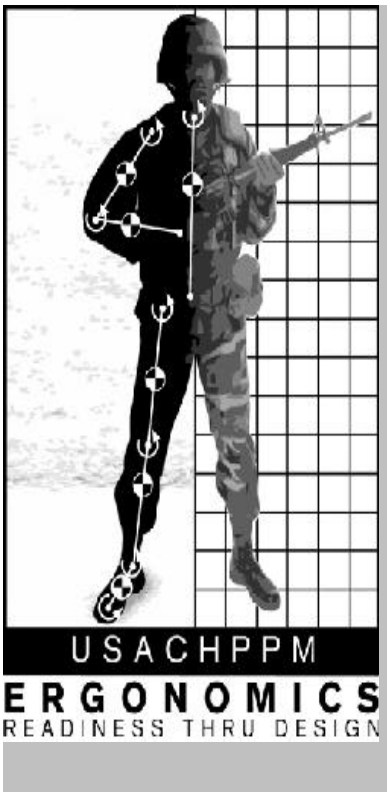
The breakout session presentations will be linked to the USACHPPM Ergonomics Program web site: http://chppm-www.apgea.army.mil/ergopgm/ergohome.htm. LTC Mary Laedtke, Ergonomics Program, USACHPPM, was the overall program coordinator for the course. She said, "this was a wonderful opportunity to showcase the great work and ergonomic knowledge-base in the DOD and Federal sector. The course evaluations tell us this conference was needed and was appreciated by the many unsung workers in the ergonomic arena who are trying to make a difference at their bases, installations, and activities."

For more information call 410-436-2088/800-222-9698/FAX 410-436-4784.



Computer Use Accelerates Vision Problems

by Abdul H. Khalid, HTIS

The use of computers has caused ergonomic health concerns at workplaces. The most common concerns are eyestrain, blurred vision and/or headaches, eye discomfort, and vision problems. Workstation design and proper work practices can help to reduce these conditions.

Computers are now a way of life. A majority of computer users spend considerable amounts of time at a computer screen for work and fun, especially with the development of the Internet. The way one uses his or her eyes determines work performance on the job as vision plays an important role in one's work activities. Thus, viewing a computer screen requires good functioning of the eyes, good vision, and good focus of the eyes on the screen and reference materials, and good eye movement and coordination. Computer users are at higher risk for irritated eyes and musculoskeletal problems, thereby increasing discomfort, and decreasing performance.

The American Optometrist Association defines Computer Vision Syndrome (CVS) as a "complex of eye and vision problems related to near-work that are experienced during or related to computer use". The primary symptoms are eyestrain, blurred vision, dry and irritated eyes, tired eyes, and headaches. Neck and backaches can also be related to the way that we use our eyes at the Contributing factors such as glare, incorrect spectacle correction, work habits, and many others factors may need study in order to solve these problems. Alleviation of these factors often eliminates or reduces vision and eye problems.

Visual ergonomics in the workplace is the future need of computer users. The anatomy and functioning of the eyeball, visual system, visual processing in the brain, aging factors, lighting and visual demands, and visual and body posture are very important. Both eyes are used in conjunction with focusing system and are important to computer use.

Environmental and visual solutions for CVS include general eye care, computer eyeglasses, contact lenses, proper terminal alignment, screen reflections, body posture, working conditions, breaks and more. Specific eye exercises assist in the ongoing process of relieving eye stress. Some suggested measures to improve the comfort at computer screen area are the position of monitor or screen, tilting angle, larger monitor, position of key board, pointing devices, document holder, wrist support, lighting, and cleaning of computer screens.

As ergonomics is an essential link between safety, quality, and production, DOD has issued an information guide for supervisors and the users entitled, "Creating the Ideal Computer Workstation: A Step-by-Step Guide", June 2000. This step-by-step guide provides a 13-step plan to create an ergonomically sound workstation for computer users that includes the following.

- Illustrated guidelines on how to adjust your furniture, computer equipment, and work aids.
- Information on how to organize your work area and tasks.
- Checklists to evaluate the ergonomics of your current workstation and for use as specification lists when purchasing new equipment.

This guide is a product of the "DOD Ergonomics Working Group" and is available at the USACHPPM website: http://chppm-www.apgea.army.mil/ergog2/index.htm

Any DOD personnel experiencing symptoms of CVS should try the suggestions cited in the guide or consult their optomologists. For further information on CVS or other health concerns due to computer use, DOD personnel can contact, Lt. Col. Alen L. Blatterman, USACHPPM, Tri-Vision Conservation Service Readiness, Aberdeen Proving Ground, MD 21010; 410-436-2714, DSN584-2714.

References: 1. Army News Service, January 19, 2000, http://www.dtic.mil/armylink/news/Jan2000/. 2. Savage, T., Ways to Reduce Computer Eyestrain, Safety & Health 155:60-63, March 1997. 3. DOD Information Guide for Supervisors and Users: "Creating the Ideal Computer Workstation: A Step-by-Step Guide", June 2000".

NIOSH Study: Breaks Reduce VDT Discomforts

by Abdul H. Khalid, HTIS

On May 23, 2000, the National Institute for Occupational Safety and Health (NIOSH), revealed that short and strategically spaced rest breaks can reduce eyestrain and musculoskeletal discomforts for video display terminal (VDT) operators without decreasing productivity. The new study and findings were published in the May 2000 issue of the Scientific Journal of Ergonomics.

The new study compared results under two rest-break schedules for a group of 42 data-entry operators employed by the Internal Revenue Service (IRS). Under one schedule, the VDT operators worked their regular daily schedule that included two 15-minute rest breaks, one in each half of the work shift. In the other schedule, the conventional breaks were supplemented with four 5-minute breaks spaced throughout the workday. The workers consistently reported less eye soreness, visual blurring, and upper-body discomfort under the supplementary schedule. Quantity and quality of work were comparable under both schedules, as measured by numbers of keystrokes and operators' accuracy in typing data from paper forms into the computer. Adding short breaks through the day may relieve cumulative discomforts from repetitive motions and static postures in a way that conventional break schedules do not, the findings support.

According to the NIOSH Director, Linda Rosenstock, the U.S. is moving from a manufacturing to a service economy and more and more workers are being employed in VDT intensive jobs. Practical steps are available for improving job quality, which may reduce a risk of musculoskeletal injuries for a growing numbers of workers.

The NIOSH conducted this study at the request of the IRS and the National Treasury Employees Union (NTEU). In collaboration with the IRS and NTEU, NIOSH evaluated the effects of various changes in work organization and the ergonomic design required reducing VDT operators' musculoskeletal discomforts at a tax document-processing center.

For further information on this study and on other issues related to VDTs, DOD personnel may call the NIOSH toll-free information number, 1-800-35-NIOSH (1-800-356-4674) or visit NIOSH on the World Wide Web at: http://www.cdc.gov/niosh.

Reference: NIOSH Press Release, May 23, 2000, “Strategic Rest Breaks Reduce VDT Discomforts Without Impairing Productivity”, NIOSH Study Finds, May 22, 2000.

NTP Carcinogen Report Adds Several New Chemicals

by B. Howell & A. Khalid, HTIS

The National Toxicology Program’s Report on Carcinogens (ROC), 9th edition was released on May 15, 2000. The report identifies substances known or *reasonably anticipated* to cause cancer, and to which a significant number of Americans are exposed. The report identifies potential cancer hazards. However, a listing in the report does not by itself establish that a substance presents a cancer risk to an individual in daily life. This latest report contains 14 new listings. Eight of the new entries are listed as *known to be human carcinogens* and the other 6 entries as *reasonably anticipated to be human carcinogens*. This report also reclassifies 6 current listings from *reasonably anticipated* to *known to be human carcinogens*. 2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD) has been proposed for upgrade to the *known to be a human carcinogen* category. The proposed listing is currently in litigation. Depending on the outcome of the litigation, an addendum may be published. New listings include some substances to which large numbers of people are exposed, including environmental tobacco smoke, tobacco smoking, oral smokeless tobacco products, alcoholic beverage consumption, diesel exhaust particulates, UV solar radiation, and use of sun

lamps and sun beds. The report's findings are based on three years of study that included three scientific reviews and public comment from scientists, consumers and other interested parties.

The following briefly describes the additions, upgrades, and other changes made to the 9th edition of the report. Added as *known human carcinogens* or upgraded to that category in the 9th Report:

Environmental tobacco smoke: Environmental tobacco smoke, generated from sidestream and exhaled mainstream smoke of cigarettes, pipes, and cigars is listed as a *known human carcinogen*. The report indicates this listing is based on the observed causal relationship between passive exposure to tobacco smoke and human lung cancer. It states that there are conclusive published studies that indicate increased risk of lung cancer in nonsmoking women living with smoking husbands or working with smoking co-workers.

Tobacco smoking: Tobacco smoking (i.e. directly inhaled tobacco smoke) is listed as a *known human carcinogen.* Cigarette smoking has been known to cause cancer in humans for many years, and is now considered to be the leading preventable cause of cancer in developed countries. Separate chemicals identified in tobacco smoke were already listed as carcinogens in the report. The new listing of tobacco smoking is the result of the 1996 revision in the review process that allows for the review and listing of exposure circumstances.

Smokeless tobacco: Smokeless tobacco (chewing tobacco and snuff) forms a third group of tobacco-related substances listed as *known human carcinogens*. The report states that cancers of the oral cavity (i.e., mouth, lip, tongue) have been associated with the use of chewing tobacco as well as snuff, which are the two main forms of smokeless tobacco used in the U.S. Studies indicate that the tumors often arise at the site of placement of the tobacco.

Consumption of alcoholic beverages: Consumption of alcoholic beverages is listed as *a known human carcinogen*. The report states that consumption of alcoholic beverages is causally related to cancers of the mouth, pharynx, larynx, and esophagus, and goes on to say that studies indicate that the risk is most pronounced among smokers and at the highest levels of consumption. The effect of a given level of alcoholic beverage intake on cancers of the head and neck is influenced by other factors, especially smoking, but that smoking does not explain the increased cancer hazard associated with alcoholic beverage consumption. The report also states that there is evidence that suggests a link between alcoholic beverage consumption and cancer of the liver and breast.

Solar UV radiation and exposure to sunlamps and sunbeds: Exposure to solar ultraviolet radiation, sunlamps, or sunbeds is listed as a *known human carcinogen*. The report cites data that indicate a causal relationship between exposure to solar radiation and melanoma and other skin cancers in humans, and that exposure to sunlamps or sunbeds is associated with melanoma. The report also indicated that skin cancers are observed with increasing duration of exposure and the effects are especially pronounced in individuals under 30 and for those who experience sunburn.

Crystalline silica (respirable size): Crystalline silica, which is primarily quartz dust occurring in industrial and occupational settings in the form of fine, breathable particles, was also upgraded to a *known human carcinogen*. Respirable crystalline silica results from mining and grinding coal. Comments were received expressing concern that this listing would lead to confusion among the public over the possibility that beach sand is carcinogenic. However, the report makes clear that the listing is based on increased lung cancer rates in workers exposed to respirable-size crystalline silica, primarily quartz and crystabolite, that are generated during sandblasting and similar activities in an occupational setting.

Strong inorganic acid mists containing sulfuric acid: Strong inorganic acid mists containing sulfuric acid are listed as *known human carcinogens*. The report states that studies indicate occupational exposures to strong inorganic acid mists containing sulfuric acid are specifically associated with laryngeal and lung cancer in humans. Industrial processes in which occupational exposure to sulfuric acid mist has been examined include manufacture of isopropyl alcohol, lead batteries, phosphate fertilizers, soap and detergents, synthetic ethanol, and pickling and other acid treatments of metals.

Dyes metabolized to benzidine: Dyes metabolized to benzidine are listed *as known human carcinogens*. These dyes are used mainly for dyeing textiles and paper. This listing is based on the fact that benzidine, which has been listed in the report since 1980, is a *known human carcinogen* and once absorbed, benzidine-based dyes are converted to free benzidine in humans. Benzidine was one of the first chemicals for which an association of occupational exposure and increased incidence of urinary bladder cancer in humans was reported.

1,3-Butadiene: 1,3-Butadiene was upgraded from *reasonably anticipated* to a *known human carcin*ogen. This chemical is used in the manufacture of synthetic rubber. The upgrading to a *known human carcinogen* was based on findings from studies in humans that provided evidence of a causal relationship between occupational exposure to 1,3-butadiene and excess mortality from hematopoietic cancers.

Cadmium and cadmium compounds: Cadmium and cadmium compounds were upgraded from *reasonably anticipated* to *known human carcinogens*. These materials are used in batteries, coating and plating, plastic and synthetic products and alloys, and had been listed as *reasonably anticipated to be a human carcinogen* since 1980. The report identifies findings of increased risk of lung cancers in workers exposed to cadmium and cadmium compounds.

Ethylene oxide: Ethylene oxide was upgraded from *reasonably anticipated* to a *known human carcinogen*. This chemical is used to make other chemicals and is also widely used in the health care industry to sterilize medical devices. It had been listed *reasonably anticipated to be a human carcinogen* since 1985. The report cites findings of increased risk for leukemia and non-Hodgkin's lymphoma in workers exposed to ethylene oxide. This information coupled with data on its genotoxic and biochemical interactions with human DNA led to the upgrade to a *known human carcinogen*.

Tamoxifen: Tamoxifen is listed as a *known human carcinogen* based on evidence from studies in humans that indicate tamoxifen increases the risk of uterine cancer in women. While there is clear evidence that tamoxifen causes uterine cancer in women, there is also conclusive evidence that tamoxifen therapy reduces the risk of cancer in the opposite breast in women with a previous diagnosis of breast cancer, as well as reduces the incidence of breast cancer in women at increased risk for this disease.

Saccharin: Saccharin has been removed from the report's list. The Calorie Control Council nominated saccharin for delisting, which led to a new review of the carcinogenicity data for saccharin. Saccharin had been listed in the report as *reasonably anticipated to be a human carcinogen* since 1981. The basis for this listing was sufficient evidence of carcinogenicity in experimental animals. Saccharin was removed from the report after this extensive review determined that the rodent cancer data are not sufficient to meet the current criteria to list this chemical in the report as a *reasonably anticipated human carcinogen*. This is based on the determination that the observed bladder tumors in rats arose from a mechanism that is not relevant to humans. Dr. Kenneth Olden, Director of the National Institute of Environmental Health Sciences and the National Toxicology Program, said, "Two decades ago, when saccharin was shown to produce bladder tumors in rats, it was a prudent, protective step to consider the sweetener to be a likely human carcinogen. However, our understanding of the science has advanced and allows us to make finer distinctions today. Studies now indicate that the rat bladder tumors arise from mechanisms that are not relevant to the human situation. In addition, we have decades more data from observations of humans using saccharin that adds to our confidence. In other words, with better science we can now make a better call."

Ethyl acrylate: Ethyl acrylate, a substance used in making latex paints and textiles, which had been listed since 1989 as *reasonably anticipated to be a human carcinogen*, was also delisted. The Basic Acrylic Monomer Manufacturers, Inc. had nominated ethyl acrylate for delisting, which led to a new review of the carcinogenicity data for ethyl acrylate. The review found that tumors induced in animal studies were seen only when the chemical was given by an oral route at high concentrations, resulting in persistent and severe gastric tissue injury. Because significant chronic human oral exposure to high concentrations of ethyl acrylate is unlikely, it was concluded that ethyl acrylate should not be considered *reasonably anticipated to be a human carcinogen*. The delistings of saccharin and ethyl

acrylate are the first since a formal process for delisting substances from the report was established in 1996.

Diesel exhaust particulates: Diesel exhaust particulates are listed as *reasonably anticipated to be a human carcinogen*. These particulates are generated in diesel exhaust, which is a complex mixture of combustion products of diesel fuel, with the exact composition depending on the type of engine, the speed and load at which it is run, and the composition of the fuel used. The report states the listing is based on limited findings of elevated lung cancer rates in occupational groups exposed to diesel exhaust. These groups include railroad, mine, bus-garage, and trucking company workers.

Isoprene: Isoprene is listed as *reasonably anticipated to be a human carcinogen*. Isoprene is one of the major components that makes up natural rubber and is used to make synthetic rubbers. It is also emitted from plants and trees, has been detected in tobacco smoke and automobile exhaust, and was identified as a major endogenous hydrocarbon in human breath. The report states the listing is based on findings from laboratory animal studies of isoprene where cancer was observed in multiple organ sites following long-term inhalation exposures.

Chloroprene: Chloroprene is listed as *reasonably anticipated to be a human carcinogen*. It is primarily used in the production of the elastomer polychloroprene (neoprene). The report states the listing is based on findings from laboratory animal studies of chloroprene in which cancer was observed in multiple organs of multiple species following long-term inhalation exposures.

Phenolphthalein: Phenolphthalein is listed as *reasonably anticipated to be a human carcinogen*. It is used as a laboratory reagent and acid-base indicator and has been used in over-the-counter laxative preparations. The listing is based on findings from feeding studies of phenolphthalein that caused cancer in multiple organs in multiple species of experimental animals.

Tetrafluoroethylene: Tetrafluoroethylene is listed as *reasonably anticipated to be a human carcinogen*. It is used in the production of polytetrafluoroethylene and other polymers. The listing is based on findings from laboratory animal studies of tetrafluoroethylene in which cancer was observed in multiple organs of multiple species following long-term inhalation exposures.

Trichloroethylene: Trichloroethylene is listed as *reasonably anticipated to be a human carcinogen*. It is used mainly as a degreaser for metal parts and at one time was used to decaffeinate coffee. The listing is based on limited findings of elevated liver and biliary tract cancer rates in occupational groups exposed to trichloroethylene and sufficient evidence of cancer formation in experimental animal studies.

Questions regarding the 9th Edition Report should be directed to the NTP Liaison & Scientific Review Office at: (919) 541-0503, or e-mail: liaison@starbase.niehs.nih.gov The 9th edition of the Report is available on the NTP ROC Homepage at http://ntp-server.niehs.nih.gov/NewHomeRoC/AboutRoC.html
Reference: Reprint: May 2000, Fact Sheet, National Toxicology Program, The Report on Carcinogens-9th Edition.

EPA Delists Phosphoric Acid from EPCRA 313 TRI Reporting

by T. McCarley & A. Khalid, HTIS

By a Final Rule of June 27, 2000, EPA has formally delisted phosphoric acid from the chemicals subject to reporting under Section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA). Federal facilities became subject to EPCRA reporting requirements by Executive Order 12856 of August 3, 1993. Facilities processing or otherwise using phosphoric acid are no longer subject to the filing of a Form R for those uses, which meet or exceed an applicable threshold (25,000 pounds for processing) and (10,000 pounds for otherwise used).

This rulemaking is EPA's response to a U.S. District Court for the District of Columbia ruling that phosphoric acid does not meet the criterion for listing a substance in accordance with the EPCRA statute. The EPA had previously turned down a petition request from the Fertilizer Institute for removal of phosphoric acid (Chemical Abstracts Number 7664-38-2) from the list of substances subject

to reporting at 40 CFR 372.65. On April 15, 1999, the court rebuffed EPA's petition denial and this rulemaking is the final step in that reversal of petition denial.

The original petition had been filed by the Fertilizer Institute in November 1990 claiming that phosphoric acid did not meet any of the three listing criteria in EPCRA Section 313(d)(2): The acute human health effects criterion, the chronic human health effects criterion, or the environmental effects criterion. The EPA denied the petition in January 1988, in part because of the environmental concern for phosphoric acid's potential to cause eutrophication when released into certain water bodies. In April 1988, The Fertilizer Institute took the matter to court.

Facilities doing Form R or Form A reporting for phosphoric acid are no longer required to do so effective retroactively with the calendar 1999 reporting year. Since EPCRA Toxic Release Inventory Reports are due July 1 each year for activities the previous calendar year, facilities will have already submitted for calendar 1999 at the time of this writing.

Further information on the Toxic Release Inventory (TRI) program can be found at http://www.epa.gov/tri . Defense personnel will find a wealth of guidance documents and other information on the TRI program by keying in 'Toxic Release Inventory' into the DENIX search engine at http://www.denix.osd.mil/denix/DOD/dod.html

Reference: Federal Register, Vol.65, No. 124, pp 39552-39556 , June 27, 2000.

Phaseout of Pesticide Dursban

by Abdul Khalid, HTIS

On June 8, 2000, the U. S. EPA's Administrator announced that the use of Dursban (also known as a chlorpyrifos, the most widely used pesticide in the nation), would be significantly reduced under an agreement reached on June 7, 2000 between the EPA and pesticide makers. Chlorpyrifos is an organophosphate insecticide. The organophosphates are a group of older, widely used, and effective pesticides that can have, in sufficient doses, adverse effects on the human nervous system, such as nausea, dizziness, and respiratory paralysis.

According to EPA, blurred vision, muscle weakness, headaches and memory loss have been linked to large amounts of exposure to Dursban, and therefore, its use in homes should be phased-out. In this respect, the EPA would send instructions to its regional offices related to compliance strategy for the chlorpyrifos restrictions shortly.

Practically all home, garden, and termite control uses of the insecticide chlorpyrifos will be eliminated under this agreement. It is expected that this agreement will also significantly reduce residues on several foods regularly eaten by children (i.e., 75 percent reduction in risk to children from the foods). The pesticide is used in 20 million U.S. households annually and has been manufactured for more than 30 years. The EPA entered the agreement eliminating the specified uses for chlorpyrifos with makers of the chemical: Dow AgroSciences, Cheminova Inc., Gharda USA Inc., Luxembourg Industries (Pamol) Ltd., Makhteshim Chemical Works Ltd. and Makhteshim-Agan of North America Inc.; and Platte Chemical Company.

The agreement between the EPA and pesticide makers, would affect the following:

- The home, lawn, and garden uses, and most termite control uses in existing homes will be eliminated by the end of the year.
- Use of the pesticide from sensitive residential and non-termiticide uses will be eliminated, except for golf courses, containerized baits, and use as a mosquitocide and to control fire ants.
- Use of pesticide in schools, day care centers, parks, hospitals, nursing homes, and malls will be eliminated in 2000.
- Food uses of the pesticide targeted under the agreement for reduction are apples, tomatoes, and grapes.
- Chlorpyrifos will not be allowed as a termiticide for new home and building construction by the end of 2004.
- Retail chains such as *The Home Depot, Wal-Mart, Lowes* and others would

have to take Dursban products off store shelves in the next 18 months.

For further information on this issue or safer alternatives, DOD personnel should visit the EPA website. The pesticide portion of the EPA website is located at http://www.epa.gov/ebtpages/pesticides.html.

Reference: EPA's website: http://www.epa.gov/ebtpages/pesticides.html.

SNAP Update

by Tom McCarley, HTIS

Alternatives to ozone-depleting substances (ODS) are regulated by the EPA under Section 612 of the Clean Air Act, which is also a program known as the Significant New Alternatives Policy (SNAP). Substitute chemicals are regulated for all of the major ODS applications (refrigeration, solvent use, aerosol use, foam-blowing, etc.) and are regulated under the SNAP program whether or not the substitute materials have any ozone depletion potential. The EPA wants to ensure the substitutes are acceptable for use based on their safety, health, and environmental attributes.
In a June 19, 2000 update to the SNAP Program, EPA ruled on the acceptability of the following chemical substitutes for refrigeration and air conditioning applications:

- HFC-4310mee. HFC-4310mee is acceptable as a substitute for CFCs and HCFCs in non-mechanical heat transfer applications.

- A tradename product known as Ikon-B, a blend of trifluoroiodomethane, HFC-134a and HFC-152a, is acceptable as a substitute for CFC-12 in household refrigerators and freezers.

- A tradename product known as Ikon-A, a blend of trifluoroiodomethane and HFC-152a, is acceptable as a substitute for CFC-12 in a number of end uses including: Commercial comfort air conditioning; industrial process refrigeration and air conditioning; cold storage warehouses; refrigerated transport; retail food refrigeration; vending; water coolers; commercial ice machines; and, household refrigerators and freezers.

- HFC-245fa. HFC-245fa is acceptable as a substitute for CFC-11 in new commercial comfort air conditioning applications (commercial chillers).

- Several alternatives were also approved for foam blowing applications.

A complete discussion of the SNAP program and its acceptable and unacceptable substitutes can be found from EPA's stratospheric ozone web site at http://www.epa.gov/ozone/title6/snap/snap.html

Reference: Federal Register, Vol. 65, No. 118, pp 37900-3, June 19, 2000.

EO 13148 Sets Tough Environmental & P^2 Goals

by Tom McCarley, HTIS

On April 21, 2000, President Clinton signed Executive Order (EO) 13148, the latest in a series of "Greening the Government" Executive Orders. Among its many requirements on Federal Agencies and facilities is the goal for an additional 40% reduction in the releases of EPCRA Section 313 Toxic chemicals. In this sense, EO 13148 is an extension of 1993's EO 12856 which called for Federal facilities to first report under the Emergency Planning and Community Right to Know Act (EPCRA) and called for an initial target of a 50% reduction in toxic releases from 1994-1999. That goal exceeded pollution prevention (P^2) goals ahead of time.

The new EO builds on a series of "Greening the Government" EOs whose impacts on the Federal Government are outlined in a "report card" entitled, "First Biennial Report on Greening the Government", available for download in pdf format from the Office of the Federal Environmental Executive at http://www.ofee.gov .

Although many less toxic product substitutions may have already been selected, users of EPCRA 313 chemicals can still turn to the environmental products and services of both the Defense Logistics Agency (DLA) and General Services Administration (GSA) as a place to start their

quest towards further toxic release reductions. The place to start is the environmental products and services section of the Defense Supply Center Richmond at http://www.dscr.dla.mil/environmental.htm . For GSA managed products and services, go to http://www.fss.gsa.gov/environ/

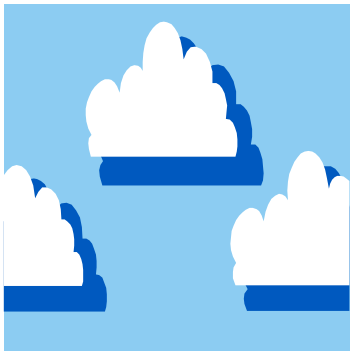
EO 13148 is expected to have a major impact on the DOD's approach to the use of EPCRA 313 Toxic Chemicals. Working groups at Federal Agencies are already looking to develop a target list of 15 priority chemicals to target for reduction in accordance with Section 503 of the EO. Sections 204 to 206 of EO 13148 directly address the issue of chemical use and are reprinted here for the reader's ready reference.

"Sec. 204. Release Reduction: Toxic Chemicals. Through innovative pollution prevention (P^2) effective facility management, and sound acquisition and procurement practices, each agency shall reduce its reported Toxic Release Inventory (TRI) releases and off-site transfers of toxic chemicals for treatment and disposal by 10 percent annually, or by 40 percent overall by December 31, 2006.

Sec. 205. Use Reduction: Toxic Chemicals and Hazardous Substances and Other Pollutants. Through identification of proven substitutes and established facility management practices, including P^2, each agency shall reduce its use of selected toxic chemicals, hazardous substances, and pollutants, or its generation of hazardous and radioactive waste types at its facilities by 50 percent by December 31, 2006. If an agency is unable to reduce the use of selected chemicals, that agency will reduce the use of selected hazardous substances or its generation of other pollutants, such as hazardous and radioactive waste types, at its facilities by 50 percent by December 31, 2006.

Sec. 206. Reductions in Ozone-Depleting Substances. Through evaluating present and future uses of ozone- depleting substances and maximizing the purchase and the use of safe, cost effective, and environmentally preferable alternatives, each agency shall develop a plan to phase out the procurement of Class I ozone- depleting substances for all non-excepted uses by December 31, 2010."

References: 1. "1st Biennial Report on Greening the Government", http://www.ofee.gov . 2. Executive Order 13148, April 21, 2000, Federal Register, Vol. 65, No. 81, pp24593-24606, April 26, 2000.



New FAR Requirements Implement EO 13101

Reprint from http://www.ofee.gov/html/far.htm July 3, 2000 (FT)

The Civilian Agency Acquisition Council and the Defense Acquisition Regulations Council have agreed on a final rule amending the Federal Acquisition Regulation (FAR) to implement Executive Order (EO) 13101, *Greening the Government Through Waste Prevention, Recycling, and Federal Acquisition*, dated September 14, 1998. **The FAR as amended by this rule, was applicable to solicitations issued after August 7, 2000**.

The objective of the rule is to improve the Government's use of recycled products and environmentally preferable products and services. Executive Order 13101 requires revision of the Federal Acquisition Regulation to prescribe policies for such products and services through procurement preference programs favoring their purchase. The rule primarily affects internal operating procedures of Federal Agencies.

The new rule:

- Revises FAR Subpart 7.1 to ensure that requirements for printing and writing paper meet minimum content requirements specified in the EO.

- Revises Subpart 11.3 to add definitions and special requirements to implement EO requirements and EPA regulations governing acquisitions of printing and writing paper, and to clarify that contracting officers may include in solicitations, additional information and requirements when needed to determine if the offeror's product meets requirements for recycled content or related standards.

- Clarifies in Part 13 how the procurement requirements of the Resource Conservation and Recovery Act (RCRA), 42 USC 6962, apply to micro-purchases and acquisitions that do not exceed $100,000.

- Reorganizes and revises Subparts 23.4 and 23.7 and associated clauses to conform to EO 13101 and RCRA.

To read the final rule visit http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=2000_register&docid=00-13819-filed

OSHA Promotes Objectives

by Abdul H. Khalid, HTIS

On My 23, 2000, at the American Industrial Hygiene Conference and Exhibition (AIHCE) in Orlando, FL, Mr. Charles N. Jeffress, Assistant Secretary of Labor for the U.S. Occupational Safety and Health Administration (OSHA), announced that OSHA is trying to communicate with the public on all levels via the internet.

The nature of work is changing and the American workforce is growing older, as well as becoming more gender and ethnically diverse. All these factors have created an impact on the management of occupational safety and health programs. Government officials, employers, and employees must begin to discuss the changing workplace and expansion of the global economy and assume a leading role in offering recommendations to address these problems.

OSHA has primary authority for all occupational safety and health issues in the workplace, sets and enforces a set of safety and health standards and promotes occupational safety and health for employers. In addition, it has a mechanism for employee complaints; encourages employers to obtain assistance; collects and disseminates safety and health data; provides education, training, and guidance to employer and employee groups; and enhances technical support and research. Important features of OSHA's Administrator speech at the conference are listed below:

- OSHA concerns are on the quality of life for all working Americans and a work place safe from injuries and diseases.

- OSHA goals are to reduce injuries and illnesses, create safety-conscious workplace cultures and secure public confidence in the agency.

- OSHA wants to share these goals with the American Industrial Hygiene Association (AIHA) and other similar organizations and considers it a joint mission of prevention for the 21st Century.

- OSHA continues receiving support from AIHA on matters such as budget, on partnerships, on safety and health programs and many other issues.

- OSHA has refined the inspection-targeting program to zero in on the companies with the highest injury rates. As of today, the injury and illness rates are down by 22 percent since 1993. Fatalities on the job have declined to an all-time low.

- OSHA has continued its partnership with specific industries and focuses on solving problems and opening avenues to reach employers and employees and to encourage them to adopt effective safety and health programs and to share strategies for eliminating common hazards that result in injuries and illnesses. The Voluntary Protection Program (VPP) is the premier partnership recognizing worksites doing an outstanding job with occupational safety and health. VPP represents the vanguard of OSHA's efforts to change workplace cultures and to make worker safety and health a top priority. Over the past six years, OSHA has employed new avenues to assist employers and employees who need guidance. Information available on OSHA's website has dramatically increased from fewer than 2,000 pages in 1995 to some 40,000

today. OSHA has 16 expert and technical advisor software programs on the web.

- OSHA announced a new workers' homepage on their website last month which draws together information of particular interest to workers. For the first time, workers can file complaints electronically. Over the past month, OSHA has received more than 400 complaints via the web.

- OSHA expects to promulgate five final rules this year. Ergonomics, recordkeeping, tuberculosis, personal protective equipment and steel erection are among them.

- Ergonomics is OSHA's top priority because work-related musculoskeletal disorders affect about 1.8 million workers each year, including 600,000 injuries serious enough to cause workers to miss work.

- OSHA plans to make training available via distance learning. OSHA is looking into using satellite-delivered training to provide live course broadcasts to OSHA staff and to the public.

- Computer-based training, using CD-ROMs, DVDs, and the Internet, is under consideration. OSHA is piloting an effort using a form of computer-based training that combines the best of both worlds. Students benefit from the direction and expertise of a live instructor. And they also receive individualized computer training.

DOD personnel can get more information on the Internet World Wide Web at: http://www.osha.gov. Information on the safety and health program is also available upon request at phone: (202) 693-1999.

Reference: http://www.osha-slc.gov/OshDoc/Speech_data/SP20000523.html , May 23, 2000.

Halon Fire Extinguishing Systems Guide

by Abdul H. Khalid, HTIS

The U.S. EPA, Department of Defense (DOD), Halon Recycling Corporation (HRC), Halon Alternatives Research Corporation (HARC), Fire Suppression Systems Association (FSSA), and Halon System Manufacturers (Ansul, Chemetron, Fenwal, Kidde, Fike, Ginge Kerr, Pyrotronics, and Wormald) coordinated and prepared the "Safety Guide for Decommissioning Halon Fire Extinguishing Systems". This safety guide contains generic instructions for the safe decommissioning of halon systems, and manufacturers' specifications and instructions for handling specific equipment. It contains diagrams of cylinder and/or valve configurations from the above cited halon system manufacturers and assists personnel involved in decommissioning halon cylinders with the identification and safe handling procedures for the most readily available cylinders. Ansul Corporation, Cerberus Pyrotronics, Chemetron, Fike, Ginge Kerr, Kidde Fenwal, and Wormald provide support to the decommissioning of halon equipment.

Although other manufacturers' cylinders and valves have been sold and installed, their configuration and specification documents are not available at this time. Updates to this safety guide will be made, as information becomes available. However, the operating principles identified in this guide, may apply to any manufacturer's equipment.

This document reviews methods that have enabled qualified trained technicians to handle fire suppression system cylinders and equipment safely. Safe use and disposal of materials and waste, and worker and community safety are the responsibility of the owner and operator of fire suppression system cylinders and other equipment.

Also, this document is intended as a tool to assist trained, qualified technicians as well as a training or general reference document. It also assists personnel involved in decommissioning halon cylinders with the identification and safe handling procedures for the most readily available cylinders. **It is not intended for use as a manual for untrained, unqualified individuals attempting to decommission or otherwise handle fire suppression system cylinders or equipment**. The following is the main table of contents of the guide.

- Introduction
- Halon Decommissioning (Potential Risks Associated with Decommissioning and Understanding Halon System Configurations)
- General Field Decommissioning Procedures (Secure Cylinders, Disable Actuation Devices, Install Anti-Recoil Devices, Packing Cylinders for Shipment, and, Receiving Shipped Cylinders)
- Appendices A, B, and C (Manufacturers' Valves and Cylinder Configurations).

This document can be assessed from the DENIX web site at: http://www.denix.osd.mil/denix/Public/News/DLA/Halon/hal1.html. Lists of Substitutes for Ozone-Depleting Substances is available at EPA's web site at: http://www.epa.gov/ozone/title6/snap/lists/index.html#halons

Reference: http://www.denix.osd.mil/denix/Public/News/DLA/Halon/hal1.html, June 2000.

Ship Scrappers Guide

by A. Khalid & T. McCarley, HTIS

Recently, the EPA's Federal Facilities Enforcement Office (FFEO), of the Office of Enforcement and Compliance Assurance, issued an environmental compliance guide on ship scrapping entitled, "A Guide for Ship Scrappers: Tips for Regulatory Compliance." The guide is a 259-page, 1Mb pdf file. It provides guidance to assist regulated entities to understand their obligations under environmental laws. This guide also helps ship scrappers and site supervisors at ship scrapping facilities comply with applicable environmental, health, and safety regulations and requirements. Information on removal and disposing of asbestos, paint, organic chemicals (known as polychlorinated biphenyls or PCBs), contaminated bilge and ballast water, oil and fuel, heavy metals and various kinds of ship machinery is also available.

Any DOD personnel interested in this guide, should contact the EPA's FFEO at 1200 Pennsylvania Avenue, NW, Washington, DC, 20460; 202-564-2461. Copies can also be obtained on-line at the FFEO web site: http://es.epa.gov/oeca/fedfac/scrap.pdf

Reference: EPA's OECA, EPA 315-B-00-001, Summer 2000.

Phyto-remediation Guide

by Tom McCarley, HTIS

The selective use of plants as "biological engineering systems" to contain and treat hazardous contamination in soil and groundwater is receiving increased focus as an economical alternative to more conventional cleanup technologies. The phytoremediation technology is just 10 years old and shows great promise both on its own and as supplemental treatments to contaminated sites. Some 80 university and government research groups are working in this area and phytoremediation is currently being used at a number of military installations in some capacity.

As part of a recent hazardous waste conference, a special one-day pre-conference workshop on phytoremediation was held at EPA Region VIII headquarters in Denver on May 22, 2000. At that workshop, copies of EPA's "Introduction to Phytoremediation" were made available. Although the guide carries a February 2000 date, paper copies were not available until mid-May 2000. The guide's EPA publication number is EPA/600/R-99/107. It is published by EPA's Office of Research and Development at the National Risk Management Research Laboratory in Cincinnati, OH.

The guide will serve as an excellent primer for Federal facility environmental managers as they look for politically acceptable and cost effective ways of cleaning up contaminated sites. Phytoremediation is a tool for both organic contaminants like fuel and solvent spill sites and inorganic (metals) contamination.

"Introduction to Phytoremediation" contains chapters as follows:

- Introduction
- Overview of Phytoremediation

- Evaluation of Phytoremediation Technologies
- Phytoremediation System Selection and Design Considerations
- Remedial Objectives, Treatability, and Evaluation
- Case Studies (include both an Army and Air Force site)

Appendices include a glossary, Phytoremediation database (including numerous military sites), references, and a cross-reference of both common and scientific botanical names of useful plants used in phytoremediation.

The guide also be downloaded as a portable document format (PDF) http://www.clu-in.org/download/remed/introphyto.pdf (1.9Mb, 104 pages)

References: 1. “Introduction to Phytoremediation”, EPA/600/R-99/107, February 2000.
2. Workshop on Phytoremediation, Denver, CO, May 22, 2000.

RCRA Groundwater Guidance

by Abdul H. Khalid, HTIS

On May 3, 2000, the EPA’s Office of Solid Waste, released a draft “Handbook of Groundwater Policies for Resource Conservation and Recovery Act (RCRA) Corrective Action”. It is available on EPA’s website. This handbook is one part of the **RCRA Cleanup Reforms” that EPA announced on July 8, 1999.**

The EPA wrote this manual in order to provide a comprehensive guide for policies applicable to groundwater protection and cleanup that is associated with RCRA Corrective Action designed to achieve faster, more efficient cleanups. According to EPA, the official public comment period ends on July 2, 2000.

The handbook will help regulators, members of the regulated community, and the general public find and understand EPA policies on groundwater use and the protection and cleanup of groundwater at corrective action sites.

Any DOD personnel interested in the draft guidance document entitled, "Handbook of Groundwater Policies for RCRA Corrective Action” can call the RCRA Hotline at 800-424-9346 or visit EPA's Website at: http://www.epa.gov/correctiveaction/

Reference: http://www.epa.gov/correctiveaction/ ,May 2000.

HTIS Staffer Receives DOD ELDP Diploma

On Feb. 23, 1999, Dr. Abdul H. Khalid was nominated by the Deputy Director, Defense Logistics Agency to attend the Department of Defense Executive Leadership Development Program (ELDP) Course as a member of the ELDP class of 2000. He participated in a curriculum that included academic theoretical learning experiences, immersion weeks of hands-on training, experiential learning with each of the Military Services and the National Guard, as well as, hands-on experiences of staging high-level briefings.

A graduation briefing was held at the Pentagon auditorium. A total of 59 students developed the multimedia presentation as an account of the 10-month long training conducted at defense installations throughout the world.

A graduation ceremony took place Thursday, June 8, 2000 at the Fort Myer's Officers' Club. Honorable Alphonso Maldon, Jr. Assistant Secretary of Defense for Force Management Policy and General Richard B. Myers Vice Chairman of the Chiefs of Staff Washington, D.C. presented the diplomas to the DOD ELDP graduating students.

2nd Workshop: DOD AF Vehicle

by Abdul H. Khalid, HTIS

On May 15, 2000, the Deputy Under Secretary of Defense (Environmental Security) issued a memorandum and invited DOD personnel attending the "Second DOD Alternative Fueled Vehicle (AFV) Workshop.

According to the memorandum, DOD components must take a new look at the way it acquires and manages its non-tactical vehicles. This action is essential

because of the Energy Policy Act of 1992 and the recent Executive Order (EO) 13149, April 22, 2000, "Greening the Government. Through Federal Fleet and Transportation Efficiency and the DOD faces not only the challenge of acquiring and using substantial numbers of alternative fueled vehicles (AFV), but also the challenge of reducing the use of petroleum-based fuels by 20% by 2005. Fleet managers, environmental personnel, fuels personnel, and installation commanders need to learn more about new AFV technologies that are now available including the other requirements of the new EO.

The second DOD AFV Workshop was held from July 31 through August 2, 2000, in Orlando, Fl., in conjunction with the General Service Administration's FedFleet 2000. The next workshop will be held sometime in 2002.

DOD personnel interested in additional information regarding the DOD AFV Workshop and FedFleet 2000, should visit web site at: http://www.fedfleet98.com/. It is a rare opportunity for DOD personnel to learn about DOD-specific AFV issues at the Workshop including the general AFV issues.

For more information or any questions about the Workshop and FedFleet 2000, POC is Mr. Dave Fuchs, E-mail address: David.Fuchs@hqda.army.mil. DOD AFV Conference Agenda is also available at: http://www.fedfleet98.com/.

Reference: Second Workshop: DOD Alternative Fueled Vehicle (AFV), Office of The Deputy Under Secretary of Defense (Acquisition And Technology), Memorandum, May 15, 2000.

EPA's Beach Program

by Abdul H. Khalid, HTIS

People have the right to know about the quality of water at beaches. Is it safe to swim or play? State and local agencies usually issue advisories or close beaches for swimming if conditions present a threat to human health and also monitor most of the beaches in the United States. On July 27, 2000, the EPA released data from the 3rd Annual National Health Protection Survey of Beaches for the 1999 swimming season under its "Beach Program". The EPA's Beach Program aims to protect the health of beach-goers by assisting state, tribal, and local health and environmental officials in designing, developing and implementing beach monitoring and advisory programs and by providing the public with information about the risks associated with swimming in contaminated waters.

State and local environmental and public health officials voluntarily the public on water quality at 1,891 beaches based on the 1999 swimming season. There was a 35 percent increase in beach closings from last year and 50 percent more than two years ago. The survey shows that 459 beaches (24 percent of the reported beaches) were affected by at least one advisory or closing. The 24 percent of beaches affected are essentially the same percentage reported over the last two years, indicating the continuing importance of monitoring and closing beaches when necessary. The leading reasons cited for water quality impairment at beaches were elevated bacteria levels and rain events (stormwater runoff).

According to EPA, the most frequent sources of disease-causing microorganisms are from sewage overflows, polluted storm water runoff, sewage treatment plant malfunctions, boating wastes and malfunctioning septic systems. Pollution in beach water is often much higher during and immediately after rainstorms because water draining into the beach may carry sewage from over-flowing sewage treatment systems.

Rainwater also flows to beaches after running off lawns, farms, streets, construction sites, and other urban areas, picking up animal waste, fertilizer, pesticides, trash and many other pollutants. Many of these pollutants can end up in the water at beaches. Disease-causing microorganisms in sewage are responsible for illnesses such as bacteria gastroenteritis (diarrhea and abdominal pain), salmonellosis (food poisoning), cholera viruses, fever, common colds, gastroenteritis, diarrhea, respiratory infections, hepatitis, protozoa gastroenteritis, cryptosporidiosis and giardiasis (diarrhea and abdominal cramps), dysentery; worms, and other digestive disturbances, including vomiting, restlessness, coughing, chest pain, fever, diarrhea.

(Continued on page 16)

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Swimming or playing in unsafe water may result in minor illnesses, such as sore throats or diarrhea or more serious illnesses such as meningitis, encephalitis, and severe gastroenteritis. Children, the elderly, and people with weakened immune systems have a greater chance of getting sick when they come in contact with contaminated water. The EPA recommends that state and local officials monitor water quality and issue an advisory or closure when beaches are unsafe for swimming. By issuing beach advisories and closings, state and local officials are reducing swimmer exposure to contaminated water and protecting public heath.

There are numerous military installations in the proximity of Atlantic and Pacific coast beaches, as well as those along the Great Lakes. Individuals suspicious that beach water is contaminated should report it to local health or environmental protection officials. For additional information about the Beach Program, DOD personnel may contact the U.S. EPA, Office of Water, Office of Science and Technology at: 401 M Street, SW, Washington, DC 20460, E-Mail: OWGENERAL@epamail.epa.gov or visit EPA's Beach Watch website at http://www.epa.gov/OST/beaches

Reference: Beach Watch: http://www.epa.gov/ost/beaches/ 2. U.S. EPA Office of Water: http://www.epa.gov/OW/. 3. EPA-820-K-97-001, September 1997, “Before You Go to the Beach.

ERRATA

Jul-Aug 2000 Issue

- Cover Article, *MTBE: Cleaner Air vs. Contaminated Water*: The CBS website cited in cover page of the hard copy, is **no longer available**. Also, on page 2, third bullet, second sentence **should** read: ***The National Ambient Air Quality Standards (NAAQS) of 0.12ppm are for ozone***. Thanks to the sharp-eyed reader who caught the error.

- Page 5 article, *10 Tips for Shelf-Life Management*: The author, James Busby, from DRMO at Fort Hood, is the POC only for his article. The POC for DOD’s Shelf-Life Program is Mr. Michael Pipan.